REMARKS

Applicant appreciates the time taken by the Examiner to review Applicant's present application. This application has been carefully reviewed in light of the Official Action mailed August 22, 2006. Applicant respectfully requests reconsideration and favorable action in this case.

Rejections under 35 U.S.C. § 102

Claims 1-20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Chrisop, et al. (U.S. Patent Application Publication 2003/0043638). The Examiner states:

As independent claim 1, Chrisop teach,

- determining mode of operation of the multiple function integrated circuit; (Paragraph 0023) The Examiner notes that the system allocates RAM in response to prompts that correspond to a selected operation within the system.

- identifying at least one active module of a plurality of modules of the multiple function integrated circuit requiring a buffer based on the mode of operation; (Paragraph 0023) The Examiner notes that as discussed supra, the system allocates memory for a specific device within the multifunction peripheral device. Accordingly, the system of Chrisop identifies an active module from the multifunction peripheral device that requires memory to operate. o determining buffer requirements for the at least one active module; and

(Paragraph 0029)

- allocating memory space of the shared memory for the buffer to be used by the at least one active module (Paragraph 0025).

As per dependent claim 2, Chrisop teach, wherein the at least one active module comprises at least two of: a processing unit; universal serial bus (USB) device; digital to analog converter (DAC); and analog to digital converter (ADC) (Paragraph 0029). The Examiner notes that, for example, the fax machine can be the device selected as the active module. This being the case,

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the fax machine contains a processing unit inside of it in addition to both a digital to analog converter that converts documents before sending over an analog communication medium as well as an analog to digital converter that converts incoming analog transmissions to digital documents. The same applies for a scanner and or a copier but the DAC and ADC have different inputs and outputs and outputs.

As per dependent claim 3, Chrisop teach, wherein the mode of operation comprises at least one mode of operation selected from the group comprising: a digital audio player mode; a file storage device mode; a digital multimedia player mode; an extended memory device mode; a digital audio recorder mode; a digital multimedia recorder mode; and a personal data assistant (Paragraph 0023). The Examiner notes that as taught by Chrisop, the "RAM is allocated to the temporary storage of documents." Accordingly the system of Chrisop is acting as a file storage device. As per dependent claim 4, Chrisop teach,

- changing the mode of operation of the multiple function integrated circuit to a second mode of operation; (Paragraph 0023). *The Examiner notes that the system allocates RAM in response to prompts that correspond to a selected operation within the system.*

- identifying at least one other active module of the plurality of modules requiring another buffer based on the second mode of operation; (Paragraph 0023). *The Examiner notes that as discussed supra, the system allocates memory for a specific device within the multifunction peripheral device. Accordingly, the system of Chrisop identifies an active module from the multifunction peripheral device that requires memory to operate. As taught in Paragraph 0029 of Chrisop, the system is able to allocate multiple areas of the RAM to different functions of the system.*

- determining buffer requirements for the at least one other active module; and (Paragraph 0029)

- allocating memory space of the shared memory for the another buffer to be used by the at least one active module (Paragraph 0025).

As per dependent claim 5, Chrisop teach, wherein the at least one active module has digital memory access (DMA) to the shared memory (Paragraph 0023). The Examiner notes that the MFP system of Christop has access to digital RAM.

As per dependent claim 6, Chrisop teach, wherein the shared memory comprises on-chip random access memory (Paragraph 0029). The Examiner notes that the RAM is shown as on-chip RAM in figure 1 item 106.

As per independent claim 7, Chrisop teach,

- determining a first mode of operation of the multiple function integrated circuit; (Paragraph 0023). *The Examiner notes that the system allocates RAM in response to prompts that correspond to a selected operation within the system.*

- identifying at least one active module of a plurality of modules of the multiple function integrated circuit requiring a buffer based on the first mode of operation; (Paragraph 0023). *The Examiner notes that as discussed supra, the system allocates memory for a specific device within the multifunction peripheral device. Accordingly, the system of Chrisop identifies an active module from the multifunction peripheral device that requires memory to operate.*

- determining buffer requirements for the at least one active module; and (Paragraph 0029)

- allocating memory space of the shared memory for a buffer to be used by the at least one active module (Paragraph 0025).

As per dependent claim 8, Chrisop teach, detecting activation of the multiple function integrated circuit; (Paragraph 0023).

As per dependent claim 9, Chrisop teach,

- detecting a change from the first mode of operation of the multiple function integrated circuit to a second mode of operation; (Paragraph 0023). *The Examiner notes that the system allocates RAM in response to prompts that correspond to a selected operation within the system.*

-        identifying at least one active module of the plurality of modules of the multiple function integrated circuit requiring a buffer based on the second mode of operation; (Paragraph 0023). *The Examiner notes that as discussed supra, the system allocates memory for a specific device within the multifunction peripheral device. Accordingly, the system of Chrisop identifies an active module from the multifunction peripheral device that requires memory to operate. As taught in Paragraph 0029 of Chrisop, the system is able to allocate multiple areas of the RAM to different functions of the system.*

-        determining buffer requirements for the at least one active module; and (Paragraph 0029)

-        allocating memory space of the shared memory for a buffer to be used by the at least one active module (Paragraph 0025).

As per dependent claim 10, Chrisop teach, wherein the at least one active module comprises: a processing unit; universal serial bus (USB) device; digital to analog converter (DAC); and analog to digital converter (ADC) (Paragraph 0029). *The Examiner notes that, for example, the fax machine can be the device selected as the active module. This being the case, the fax machine contains a processing unit inside of it in addition to both a digital to analog converter that converts documents before sending over an analog communication medium as well as an analog to digital converter that converts incoming analog transmissions to digital documents. The same applies for a scanner and or a copier but the DAC and ADC have different inputs and outputs.*

As per dependent claim 11, Chrisop teach, wherein the first mode of operation and second mode of operation comprise at least one mode of operation selected from: a digital audio player mode; a file storage device mode; a digital multimedia player mode; an extended memory device mode; a digital audio recorder mode; a digital multimedia recorder mode; and a personal data assistant (Paragraph 0023). *The Examiner notes that as taught by Chrisop, the "RAM is allocated to the temporary storage of documents." Accordingly the system of Chrisop is acting as a file storage device.*

As per dependent claim 12, Chrisop teach, wherein the at least one active module has digital memory access (DMA) to the shared memory (Paragraph 0023). *The Examiner notes that the MFP system of Christop has access to digital RAM.*

As per dependent claim 13, Chrisop teach, wherein the shared memory comprises on-chip random access memory (Paragraph 0029). *The Examiner notes that the RAM is shown as on-chip RAM in figure 1 item 106.*

As per independent claim 14, Chrisop teach,

- processing module; and (Figure 1 - allocator)

- memory operably coupled to the processing module, wherein at least portion of the memory functions as the shared memory and wherein the memory stores operational instructions that cause the processing module to: detect activation of the multiple function integrated circuit; (Figure 1 item 106)

- determine a first mode of operation of the multiple function integrated circuit; (Paragraph 0023). *The Examiner notes that the system allocates RAM in response to prompts that correspond to a selected operation within the system.*

- identify the at least one active modules of the multiple function integrated circuit requiring a buffer based on the first mode of operation; (Paragraph 0023). *The Examiner notes that as discussed supra, the system allocates memory for a specific device within the multifunction peripheral device. Accordingly, the system of Chrisop identifies an active module from the multifunction peripheral device that requires memory to operate.*

- determine buffer requirements for the at least one identified active module; and (Paragraph 0029)

- allocate memory space within the RAM for a buffer to be used by the at least one active module. (Paragraph 0025).

As per dependent claim 15, Chrisop teach,

- detect a change from the first mode of operation of the multiple function integrated circuit to a second mode of operation; (Paragraph 0023).

The Examiner notes that the system allocates RAM in response to prompts that correspond to a selected operation within the system.

- identify at least one active module of the plurality of modules of the multiple function integrated circuit requiring a buffer based on the second mode of operation; (Paragraph 0023). *The Examiner notes that as discussed supra, the system allocates memory for a specific device within the multifunction peripheral device. Accordingly, the system of Chrisop identifies an active module from the multifunction peripheral device that requires memory to operate. As taught in Paragraph 0029 of Chrisop, the system is able to allocate multiple areas of the RAM to different functions of the system.*

- determine buffer requirements for the at least one active module; and (Paragraph 0029)

- allocate memory space of the shared memory for a buffer to be used by the at least one active module (Paragraph 0025).

As per dependent claim 16, Chrisop teach, wherein the at least one active module further comprises at least one of: universal serial bus (USB) device; a flash memory device; an electronically programmable read only memory (EPROM) device; a multi-wire device; a hard drive device; digital to analog converter (DAC); and analog to digital converter (ADC) (Paragraph 0024). *The Examiner incorporates by reference herein the comments made supra with respect to claim 1 and the fax machine.*

As per dependent claim 17, Chrisop teach, wherein the first mode of operation and second mode of operation comprise at least one mode of operation selected from: a digital audio player mode; a file storage device mode; a digital multimedia player mode; an extended memory device mode; a digital audio recorder mode; a digital multimedia recorder mode; and a personal data assistant (Paragraph 0023). *The Examiner notes that as taught by Chrisop, the "RAM is allocated to the temporary storage of documents." Accordingly the system of Chrisop is acting as a file storage device.*

As per dependent claim 18, Chrisop teach, wherein the) at least one active module has digital memory access (DMA) to the shared memory (Paragraph 0023). *The Examiner notes that the MFP system of Christop has access to digital RAM.*

As per dependent claim 19, Chrisop teach, wherein the processing module determines the first mode of operation from initialization inputs to the multiple function integrated circuit, wherein the initialization inputs identify active modules operable coupled to the multiple function integrated circuit {Paragraph 0023-0025). *The Examiner incorporates by reference herein the comments made supra with respect to claim 1.*

As per dependent claim 20, Chrisop teach, wherein the active modules include at least one of: universal serial bus (USB) device; a flash memory device; an electronically programmable read only memory (EPROM) device; a multi-wire device; a hard drive device; digital to analog converter (DAC); and analog to digital converter (ADC) (Paragraph 0024). *The Examiner incorporates by reference herein the comments made supra with respect to claim 1 and the fax machine.*

With respect to Chrisop, the applicant respectfully submits at paragraph [0023] fails to teach, as is asserted by the examiner, the allocation of shared memory within a multiple function integrated circuit. Rather, Chrisop teaches that random access memory, RAM, may be adaptively allocated in a multi-function peripheral device. The applicant respectfully submits that within these multi-function peripheral (MFP) devices, RAM is a separate integrated circuit from the processor. In the MFP devices described by Chrisop, a common microprocessor based platform is used to support MFP products. Additionally, the applicant respectfully submits that within an integrated circuit, once the integrated circuit has been designed and built, one can not increase the amount of RAM within the integrated circuit. Chrisop points to one solution as "one obvious solution to the problem to increase the amount of RAM. However, ram is expensive and using rams for multi-function MFP capacity will continue to increase." (Chrisop paragraph [0006]). Thus, Chrisop fails to teach the allocation of shared memory within a multi-function integrated circuit. Therefore, the applicant respectfully submits that the rejection to claims 1

through 20 under Chrisop is improper and respectfully request that the examiner withdraw the rejections to claims one through 20 under Chrisop.

The applicant respectfully submits that the present invention as claimed utilizes a number of modules within a multiple function integrated circuit wherein each module requires direct access to digital memory. The present invention as claimed provides a system and method for dynamic buffer allocation of shared memory within a multiple function integrated circuit. Chrisop in paragraph [0023] merely teaches that RAM, described as discrete single function integrated circuits, may be allocated for MFP device functions in response to interface prompts. This RAM is a separate integrated circuit and at no point does Chrisop teach that the MFP functions are executed within a single integrated circuit.

With respect to Claim 2, the applicant respectfully again submits that Chrisop fails to teach that the active modules are within a single multiple function integrated circuit. Rather as the examiner cites in paragraph [0029] these functions may be accessed via a Graphical User Interface (GUI) for an MFP device.

With respect to dependant Claim 3, the applicant respectfully submits that the mode of operation of the multiple function integrated circuit is selected from a group of modes of operation. The applicant again submits that the RAM within Chrisop is not located within a multiple function integrated circuit but rather a discreet integrated circuit accessed through a system architecture by other integrated circuits. Thus the applicant respectfully requests that the examiner withdraw their objections to dependant Claim 3 under Chrisop.

With respect to independent Claim 7, the applicant respectfully submits that Chrisop for the reasons described above again fails to teach the allocation of Random Access Memory (RAM) within a multiple function integrated circuit. Chrisop merely allocates memory such as RAM which may be discreet integrated circuits, i.e. not multiple function integrated circuits within a multi function peripheral device. Therefore the applicant respectfully submits that the rejections under 35 USC Section 102(e) are improper and respectfully requests that the examiner withdraw their objections and allow independent Claim 7 and the dependent claims which depend from independent Claim 7. The applicant respectfully submits that these arguments are reiterated for independent Claims 14 and the dependent Claims 15 through 20 which depend from Claim 14.

Examiner's Response to Arguments

The Examiner states:

With respect to applicant's argument located within the last paragraph of the 8th

page of the remarks (numbered as page 14) which recites:

> *"With respect to Chrisop, the applicant respectfully submits at paragraph [0023] falls to teach, as is asserted by the examiner, **the allocation ofshared memory within a multiple function integrated circuit.** Rather, Chrisop teaches that random access memory, RAM, may be adaptively allocated in a multi-function peripheral device. The applicant respectfully submits that within these multi-function peripheral devices, **RAM is a separate integrated circuit from the processor.** " (emphasis added)*

The Examiner respectfully disagrees. The instant argument directed to

claim 1 is not commensurate in scope with the claim language as the claim

language clearly defines a method where insofar as it appears to be clear,

applicant's arguments are directed to a structure. Further, the Examiner is unsure

as to where the processor, as argued by applicant, is located within the limitations

of Claim 1. Additionally, there appears to be no Claim limitation that restricts the

memory to not be on a separate integrated circuit. With respect to applicant's

arguments located within the second, third and fourth full paragraphs of the 9th

page of the remarks (numbered as page 15) which recite:

> *"With respect to Claim 2, the applicant respectfully again submits that Chrispo fails to teach **that the active modules are within a Single multiple function integrated circuit.** ... With respect to dependant Claim 3, the applicant respectfully submits that the mode of Operation of the multiple function integrated circuit is selected from a group of modes of Operation. The applicant again submits **that the RAM within Chrisop is not located within a multiple function integrated circuit**   With respect to independent Claim 7, the applicant respectfully submits that Chrisop for the same reasons described above again fails to teach **the allocation of Random Access Memory (RAM) within a multiple function integrated circuit.** " (emphasis added)*

The Examiner respectfully disagrees. The instant arguments are not commensurate in scope with the claim language. The claim language clearly defines a method where, insofar as it appears to be clear, applicant's arguments are directed to a structure.

With respect to applicant's argument located within the first paragraph of the 9th page of the remarks (numbered as page 16) which recites:

> *"The applicant respectfully submits that these arguments are reiterated for independent Claims 14 and the dependent Claims 15 through 20 which depend from Claim 14."*

The Examiner respectfully disagrees. The preamble of claim 14 states, 'dynamic buffer allocation of shared memory within a multiple function integrated circuit.' As simply and broadly claimed, the broadest most reasonable interpretation given to the preamble by the Examiner is simply memory being allocated for a buffer. Further, applicant asserts that the instant invention differs from Chrisop, in that Chrisop has memory in a separate integrated circuit. However, claim 14 recites, 'a processing module; and memory operably coupled to the processing module.' Assuming *arguendo* that Chrisop did not teach a processing module and memory operable coupled thereto, there appears to be no claim limitation that restricts the memory to not be on a separate integrated circuit.

Further, in response to applicant's arguments, the recitation 'within' has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, *the process Steps or structural limitations are able to stand alone.* See *In re Hirao,* 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie,* 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Even assuming *arguendo* that

the limitations were not able to stand alone, Chrisop teach a memory within a circuit that is operably coupled to a processor as shown at least in Figure 1.

The applicant respectfully submits that independent Claim 1 and independent Claim 14 have been amended to clearly restrict that the memory and processor to not be on a separate integrated circuits. Applicants have now made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicants respectfully request full allowance of Claims 1-20.

Conclusion

For the avoidance of all doubt, any amendment made to the specification and claims which results in deletion of scope or subject-matter is made without prejudice and with the express reservation of the right to reinstate such subject-matter or scope in this present application and with specific reservation of the right to file one or more related applications directed to such deleted subject-matter or scope.

Applicants have now made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicants respectfully request full allowance of Claims 1-20.

An extension of two (2) months (225.00 USD) is requested under 37 C.F.R. § 1.136, and the commissioner is authorized to charge Deposit Account No. 50-1415 of SigmaTel, Inc.

While Applicants believe no fee is due with this transmission, if any fees are due, the Commissioner is hereby authorized to charge Deposit Account No. 50-1415 of SigmaTel, Inc

Respectfully submitted,

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